



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,566	07/21/2003	Kiyoshige Ohmori	829-613	4790

23117 7590 02/09/2005

NIXON & VANDERHYE, PC  
1100 N GLEBE ROAD  
8TH FLOOR  
ARLINGTON, VA 22201-4714

EXAMINER

SIEK, VUTHE

ART UNIT PAPER NUMBER

2825

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/622,566

Applicant(s)

OHMORI, KIYOSHIGE

Examiner

Vuthe Siek

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11, 13 and 14 is/are rejected.
- 7) ☒ Claim(s) 5 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/21/03</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This office action is in response to application 10/622,566 filed on 7/21/2003. Claims 1-14 remain pending in the application.

#### ***Drawings***

2. Figures 8-14 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Specification***

3. The abstract of the disclosure is objected to because line 10, "and when non-matching data is present" should be changed to --when no non-matching data is present-- in order to clearly define the invention. Correction is required. See MPEP § 608.01(b).

#### ***Claim Objections***

4. Claims 1 and 4 are objected to because of the following informalities: phrase "creating first mask pattern data" and creating second mask pattern data" should be clarified which one is referred to as "corrected mask pattern data" and which one is referred to as "mask pattern data for comparison" as described in the specification and figures 1 and 4. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 6-11 and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamamoto et al. (6,077,310).

7. As to claims 1 and 4, Yamamoto et al. teach a method for creating mask pattern data for verification and fabricating a circuit (see summary) comprising dividing original mask pattern data into a first plurality of regions for creating first mask pattern data based on each of the regions processed by the optical proximity correction (OPC) (making first correction on design data for a first area of a mask pattern using a prepared correction table contains correction values corresponding to a pattern and surrounding layout) and dividing the original mask pattern data into a second plurality of regions for creating second mask pattern data based on each of the regions by the OPC (making second correction on design data for a first area of a mask pattern using a prepared correction table contains correction values corresponding to a pattern and surrounding layout), where the each of the regions of the first division has a first size and the each of the regions of the second division has a second size different from the first size. The comparison is made in order to determine whether the corrected mask

pattern data is properly corrected by matching data between the corrected mask pattern data and created mask pattern data. The prepared correction table is referred to a corrected mask pattern data and created first correction design data referred to created mask pattern data for comparison (col. 9). The matching data is described in col. 10-11, 24-25. The dividing mask is described in col. 12, 18. Deleting data correspond to removing describing in col. 20. Comparing is described in col. 21.

8. As to claims 8 and 11, Yamamoto et al. teach a method for creating mask pattern data for verification and fabricating a circuit (see summary) comprising dividing original mask pattern data into a first plurality of regions for creating first mask pattern data based on each of the regions processed by the optical proximity correction (OPC) (making first correction on design data for a first area of a mask pattern using a prepared correction table contains correction values corresponding to a pattern and surrounding layout) and dividing the original mask pattern data into a second plurality of regions for creating second mask pattern data based on each of the regions by the OPC (making second correction on design data for a first area of a mask pattern using a prepared correction table contains correction values corresponding to a pattern and surrounding layout), where the each of the regions of the first division has a first size and the each of the regions of the second division has a second size different from the first size. The comparison is made in order to determine whether the corrected mask pattern data is properly corrected by matching data between the corrected mask pattern data and created mask pattern data. The prepared correction table is referred to a corrected mask pattern data and created first correction design data referred to created

Art Unit: 2825

mask pattern data for comparison (col. 9). The matching data is described in col. 10-11, 24-25. The dividing mask is described in col. 12, 18. Deleting data correspond to removing describing in col. 20. Comparing is described in col. 21. The prescribed range for comparison is described as OPE range (described starting col. 26).

9. As to claims 2, 6, 9 and 13, Yamamoto et al. teach the sizes of division of mask pattern design data is based on simulation time to perform OPC or processing time (col. 15).

10. As to claims 3, 7, 10 and 14, Yamamoto et al. teach grouping mask pattern data and performing only one process simulation (at the same time in parallel) on OPC on the same matching zone significantly improving the efficiency (col. 12).

***Allowable Subject Matter***

11. Claims 5 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or fairly suggest the prescribed range is  $\text{Grid} \times \text{square root of } 2 \text{ or more}$ , but  $\text{Grid} \times 2 \text{ or less}$ , where the Grid is a size defining the minimum unit of the pattern.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vuthe Siek whose telephone number is (571) 272-1906. The examiner can normally be reached on Increase Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vuthe Siek

  
**VUTHE SIEK**  
**PRIMARY EXAMINER**